

17640

16117

3 Hours / 100 Marks

Seat No.

--	--	--	--	--	--	--	--

- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answers with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. a) Attempt any THREE of the following: 12
- (i) Draw a neat labelled layout of feeding posts.
 - (ii) Give any four advantages of remote control system.
 - (iii) Explain with neat sketch the four aspect colour light signalling.
 - (iv) Give the purpose and location of neutral section and section insulator.
- b) Attempt any ONE of the following: 6
- (i) With neat sketch explain automatic weight tension and temperature compensation.
 - (ii) With neat diagram explain systems of remote control.

P.T.O.

- 2. Attempt any FOUR of the following:** **16**
- a) Explain the purpose of elementary section in supply system.
 - b) State any four points which are considered while deciding the span length in overhead equipments.
 - c) Explain with neat diagram the working of double battery parallel block system in train lighting.
 - d) State the function of contactors in electric locomotive. List different types of contactors for the same with its purpose.
 - e) Draw a neat schematic diagram of earth fault protection of power and auxiliary circuit.
- 3. Attempt any FOUR of the following:** **16**
- a) What are the weaknesses of LIM propelled railway traction system?
 - b) Give the protection scheme used for 25 kV catenary protection for AC traction.
 - c) With a neat diagram explain trolley collector or pole collector for overhead system.
 - d) State any four factors by which locations and spacing of substations are decided.
 - e) What are the ratings of circuit breaker used in traction substation?
- 4. a) Attempt any THREE of the following:** **12**
- (i) What is the importance of contact wire gradient in OHE?
 - (ii) Draw the diagram of DC track circuit, where DC track are to be used.
 - (iii) Compare diamond type pantograph with faiveley type pantograph (any four points).
 - (iv) Define and give the normal values of the following terms used in OHE:
 - (i) Encumbrance
 - (ii) Stagger

- b) **Attempt any ONE of the following:** **6**
- (i) Draw a neat labelled diagram of sectioning and paralleling post and state any two important features of it.
 - (ii) Draw a neat sketch of moving secondary fixed primary single sided LIM and give two advantages and disadvantages for the same.
- 5. Attempt any TWO of the following:** **16**
- a) With a neat diagram explain the method of obtaining unidirectional polarity in train lighting.
 - b) Draw the schematic arrangement of power supply for auxiliary circuit. Explain briefly the functions and main features of equipment in auxiliary circuit.
 - c) What are the practical possibilities of LIM propelled transportation?
- 6. Attempt any TWO of the following:** **16**
- a) Explain the purpose of the following equipment in AC locomotive:
 - (i) Batteries
 - (ii) Flasher light
 - (iii) Arno converter
 - (iv) Blowers
 - b)
 - (i) Give the meaning of the term defect in a locomotive. Also give classification of it and methods to eliminate them.
 - (ii) Give the broad classification of maintenance of a locomotive and briefly explain each type.
 - c)
 - (i) Explain the neat sketch protection of locomotive against switching surges.
 - (ii) State the function of following components related to mimic diagram:
 - 1) PL
 - 2) OPL
 - 3) CHL
 - 4) GCK
-